



NATIONAL PARK SERVICE ENVIROFACTS

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National Park Service
Hazardous Waste Management &
Pollution Prevention Team
Washington, DC 20240
(202) 565-1240 (x3)

CONSTRUCTION/BUILDING DEMOLITION WASTE MANAGEMENT

DEFINITIONS

Construction/Building Demolition (C&D)

Wastes: The waste building materials, packaging, and rubble resulting from construction, renovation, repair, and demolition operation on pavements, houses, other buildings and structures.

Bulky Wastes: Items of solid waste such as appliances, furniture, trees, stumps, and other oversized wastes which, because of large size, precludes or complicates their handling by normal solid waste collection, processing, or disposal methods.

Special Wastes: Wastes generated from C&D activities that may have particular health, safety, and environmental concerns. These include asbestos containing materials (e.g., floor tile, plumbing insulation, siding and roofing), materials with lead based paint coatings (e.g., siding, walls, furniture, and cabinetry), lighting wastes (e.g., mercury containing lamps, PCB containing ballast's), electrical components (e.g., oil containing switches and transformers), and appliances and other equipment (e.g., refrigerators and air conditioning compressors containing refrigerants and oils).

APPLICABLE STANDARDS

Federal: Subtitle D of the Resource Conservation and Recovery Act (RCRA) and 40 Code of Federal Regulations (CFR) 240, 243, and 258 govern the management of solid waste, including C&D waste.

State: State governments are responsible for implementing and enforcing solid waste programs based on Federal guidelines. These include requirements for the handling of C&D waste and the **permitting of C&D waste disposal facilities**. The regulations for your state must be reviewed to assess your park's compliance status and requirements.

Other: Local governments may have specific ordinances or regulations regarding the management of C&D waste. Executive Order 12783 and NPS Staff Directive 82-2 establish waste recycling goals which are applicable to C&D wastes. Parks should also refer to the NPS Solid Waste Management Handbook (June 1996) for further technical information.

HANDLING

Handling this waste material may require special precautions such as personal protective equipment (PPE) and special procedures to prevent injury. Always remember to consult with your park or regional Safety Officer for additional information concerning proper handling. Parks and park contractors must operate C&D

waste collection, storage, and disposal operations in a manner to protect the health and safety of personnel, minimize environmental impact, and promote material recovery and recycling.

Waste and Recycling Plan: Waste and recycling plans should be developed for C&D projects prior to beginning work. The plans should identify wastes to be generated, and designate handling, recycling, and disposal procedures to be followed.

Deconstruction: Many NPS buildings being demolished have high quality construction materials that are valuable (e.g., old growth lumber). As the first step in any demolition project, an evaluation should be conducted to determine if hand deconstruction and salvage is an appropriate and cost effective technique for the project.

Contracted Projects: C&D projects are often contracted. Parks should require contractors to develop and implement sound waste recycling and waste minimization procedures. Sample contract language is available from the Denver Service Center (DSC).

Waste Segregation: Gross segregation of C&D wastes into road work materials, structural building materials, salvaged building parts, and site clearance waste is necessary. Additional segregation is often required to facilitate reuse/recycling.

Hazardous materials (e.g., lead-based paint) may be removed from the structure prior to deconstruction or demolition activities to minimize special handling and disposal requirements for the C&D wastes. These activities must be conducted by qualified personnel using appropriate health and safety procedures in accordance with regulatory requirements.

STORAGE

Areas for the temporary accumulation or storage of C&D wastes should be clearly designated. Drainage controls should be provided to minimize run-on and run-off from the areas. Sediment controls may be necessary for road and site clearance debris accumulation areas. Roll-off dumpsters, tarps and other measures should be used to contain the materials and limit infiltration and damage from weather. Accumulated water in containers and other areas should be checked to assure it is not contaminated before being released.

RECYCLING/DISPOSAL

Some C&D materials may be reusable on-site (e.g., rubble and road waste). Off-site markets for

recovery and reuse are also available for many products. The NPS Denver Service Center has developed a nationwide computerized database of companies that recycle these materials ((303) 969-2130).

Green waste from land clearance activities can be composted. C&D wastes which cannot be recycled or composted must be disposed at a **state permitted construction debris landfill**.

Vehicles used to transport C&D debris must meet applicable Federal and state transportation requirements. The wastes must be covered and contained or bundled so as to not spill during transport. Manifesting of wastes to be reclaimed, recycled, or disposed is recommended to document proper transport and disposal.

SPECIAL TOPICS

Special Waste Handling: C&D wastes containing lead-based paint must undergo a toxic characteristic leaching procedure (TCLP) hazardous waste characterization and be disposed as a hazardous waste if the results exceed 5 milligrams of lead per liter. Other wastes may also be hazardous (e.g., mercury-containing lights) or have other special handling and disposal consideration (asbestos and PCB containing materials).

POLLUTION PREVENTION

- Minimize land disturbance during C&D operations to reduce land clearance waste.
- Preserve existing structures when possible during C&D.
- Employ used and recycled content materials in renovation and construction activities.
- Maximize the recovery and marketing of reusable or recyclable materials during C&D.
- Minimize product packaging used in construction and renovation projects.

ENVIROFACT X-REFERENCES

- Asbestos Waste Management
- Lead-Based Paint Management
- Lighting Waste Management
- Hazardous Waste Characterization

CONSTRUCTION/BUILDING DEMOLITION WASTE MANAGEMENT CHECKLIST

| Checklist Item | Notes |
|--|-------|
| 1. Determine if the park and park contractors develop Waste and Recycling Plans for construction and building demolition (C&D) projects. | |
| 2. Determine if hand-deconstruction and salvage techniques to recover valuable materials are considered for demolition or reconstruction projects. | |
| 3. Verify that special wastes with particular health and safety, handling and disposal concerns have been identified prior to any renovation or demolition activities and that these materials have been addressed in project site work plans and health and safety plans. | |
| 4. Confirm that C&D wastes are segregated in order to facilitate on-site or off-site reuse or recycling. | |
| 5. Check that C&D wastes are properly accumulated and stored to minimize run-on and run-off. Ensure that appropriate sediment and vector controls are provided and that water infiltration and other weather damage to waste materials is limited. | |
| 6. Determine if on-site and off-site reuse or recycling marketing opportunities for C&D wastes are maximized. Check to see that NPS technical experts and other resources have been consulted. These include the Denver Service Center [(303) 969-2130] and the Sustainability Coordinator at the Presidio in San Francisco [(415) 561-4321]. | |
| 7. Verify that appropriate procedures for the management of C&D wastes of special concern such as asbestos containing materials, lead-based paint, lighting and electrical components, and appliances containing refrigerant and oils are utilized. These include the TCLP testing of wastes containing lead-based paint to determine if they are hazardous waste. | |
| 8. Ensure that C&D wastes are transported in vehicles which meet regulatory requirements and that the materials are covered and/or bundled so as to prevent spillage during transport. | |
| 9. Determine if green waste from land clearance activities are composted. | |
| 10. Ensure that wastes which cannot be reused or recycled or composted are properly disposed in a state permitted C&D debris landfill. | |
| 11. Check if records of construction and demolition debris transport and disposal are maintained to document proper disposal. | |
| 12. Determine if pollution prevention opportunities to minimize C&D debris waste generation and maximize C&D waste reuse and recycling are identified and implemented for all C&D projects. | |